

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2004/001420

A. CLASSIFICATION OF SUBJECT MATTER												
Int. Cl. ⁷ : A61M 16/00												
According to International Patent Classification (IPC) or to both national classification and IPC												
B. FIELDS SEARCHED												
Minimum documentation searched (classification system followed by classification symbols)												
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched												
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) DWPI IPC A61M-016/IC A62 B/IC + keywords (ventilat respirat breath [vocal cord] voice close shut duration period time heart cardi assist support synch rhythm wave fail indica analys determin measur)												
C. DOCUMENTS CONSIDERED TO BE RELEVANT												
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.										
X	GB 2294642 A (BRAIN) 8 May 1996 Whole document	1-8, 11, 13, 15, 17, 19-24, 26-28, 30, 34- 36, 39, 41, 43										
A	US 4519399 A (HORI) 28 May 1985 Whole document											
X	WO 2000/067827 A1 (RESPIRONICS INC) 16 November 2000 Pages 3-17	47,49-52,54- 59,61-66, 92,94,96,97, 121,123,125, 126,150,152, 154,155										
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex												
<p>* Special categories of cited documents:</p> <table border="0"> <tr> <td>"A" document defining the general state of the art which is not considered to be of particular relevance</td> <td>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</td> </tr> <tr> <td>"E" earlier application or patent but published on or after the international filing date</td> <td>"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</td> </tr> <tr> <td>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</td> <td>"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</td> </tr> <tr> <td>"O" document referring to an oral disclosure, use, exhibition or other means</td> <td>"&" document member of the same patent family</td> </tr> <tr> <td>"P" document published prior to the international filing date but later than the priority date claimed</td> <td></td> </tr> </table>			"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family	"P" document published prior to the international filing date but later than the priority date claimed	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention											
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone											
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art											
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family											
"P" document published prior to the international filing date but later than the priority date claimed												
Date of the actual completion of the international search 5 November 2004		Date of mailing of the international search report 12 JAN 2005										
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaustalia.gov.au Facsimile No. (02) 6285 3929		Authorized officer Sue Thomas Telephone No : (02) 6283 2454										

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 1989/009041 A1 (CARDIOPULMONARY CORP) 5 October 1989 Pages 6-20	47, 54, 61, 68-70, 76-78, 84-86
X	US 5353788 A (MILES) 11 October 1994 Whole document	47, 54, 61
X	US 2002/0169384 A1 (KOWALLIK et al) 14 November 2002 Whole document	47-49, 54-56, 61-63
A	WO 2000/045702 A1 (REES et al) 10 August 2000 Whole document	
X	WO 1997/030744 A1 (UNIVERSITY OF MASSACHUSETTS) 28 August 1997 Pages 3-11	68, 76, 84
X	US 5188098 A (HOFFMAN et al) 23 February 1993 Columns 1-6	68, 76, 84
X	WO 2002/026283 A2 (RESPIRONICS INC) 4 April 2002 Pages 6-23	92-94, 96, 97, 100, 103, 104, 116, 118, 121-123, 125, 126, 129, 131-133, 145, 147, 150-152, 154, 155, 158, 160-162, 174, 176
X	WO 1999/061088 A1 (RESMED LTD) 2 December 1999 Pages 11-19	92-94, 96, 100-103, 116, 121-123, 125, 126, 129, 145, 150-152, 154, 155, 158, 174
X	US 2003/0121519 A1 (ESTES et al) 3 July 2003 Pages 4-14	92, 121, 150
X	EP 1295623 A1 (ELA MEDICAL) 26 March 2003 Whole document	92, 93, 121, 122, 150, 151

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International application No.
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C (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 1999/045989 A1 (RESPIRONICS INC) 16 September 1999 Pages 16-46	92, 121, 150
X	US 5794615 A (ESTES) 18 August 1998 Whole document	92, 121, 150

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Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Claims 1-46 relate to a method and apparatus for detecting reflex vocal cord closure

Claims 47-67 relate to a method and apparatus for assessing treatment by determining heart treatment index as a function of duration and pressure of gas delivery

Claims 68-91 relate to a method and apparatus for treating heart failure by generating a cardiac pressure waveform synchronized with the cardiac rhythm of the patient

Claims 92-178 relate to a method and apparatus for evaluating heart failure from the airflow of the patient

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☒ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

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This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member			
GB	2294642	CA	2162013	US	5584290
US	4519399	DE	3345067	FR	2537429
US	2002/169384	EP	1226841	DE	10103973
US	5353788	NIL			
WO	8909041	AU	15167/92	AU	35477/89
		EP	0407463	NO	904250
WO	0067827	AU	49772/00	CA	2369305
WO	1997/030744	AU	19709/97	US	5740797
US	5188098	AU	28832/92	WO	1993/008859
WO	2002/026283	AU	93060/01	CA	2421774
		US	2002/088465	US	2004/221848
WO	1999/061088	AU	31211/99	AU	37099/01
		EP	1083953	US	2003/154979
US	2003/121519	AU	30801/99	CA	2323455
		US	5535738	US	5794615
		WO	9945989	WO	2004/047621
EP	1295623	FR	2829917	US	2003/078619
WO	1999/045989	AU	30801/99	CA	2323455
		US	5535738	US	5794615
		WO	2004/047621		
US	5794615	AU	30801/99	CA	2323455
		US	5535738	US	6105575
		US	2003/121519	WO	1999/45989
WO	2000/045702	AU	22788/00	CA	2359575
				EP	1152690

Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.

END OF ANNEX